June 14, 1932. H. FANKBONER 1,862,744

INKING MECHANISM

Filed Aug. 31, 1929 2 Sheets-Sheet 1

Fig 1

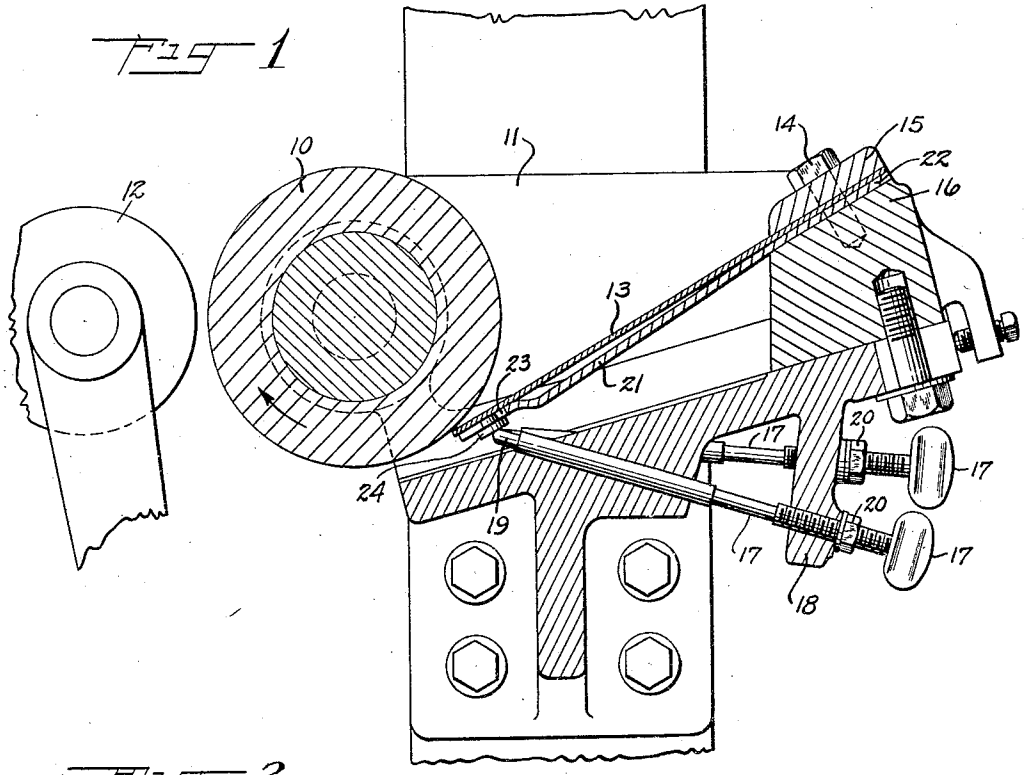
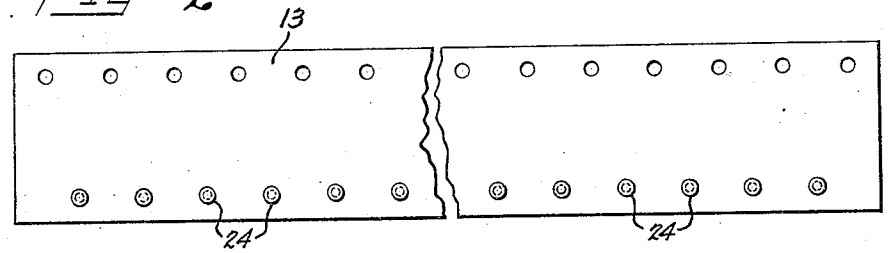


Fig 2



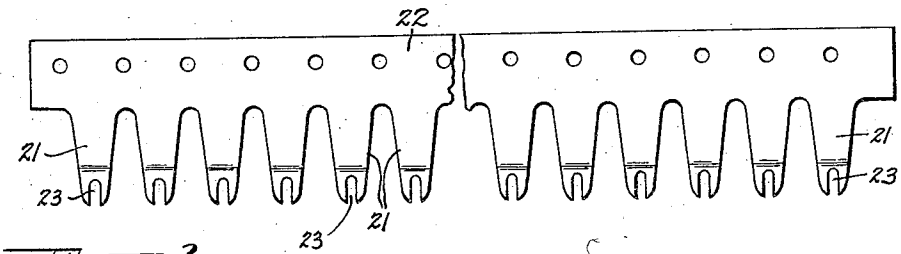


Fig 3

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INKING MECHANISM

Filed Aug. 31, 1929 2 Sheets-Sheet 2

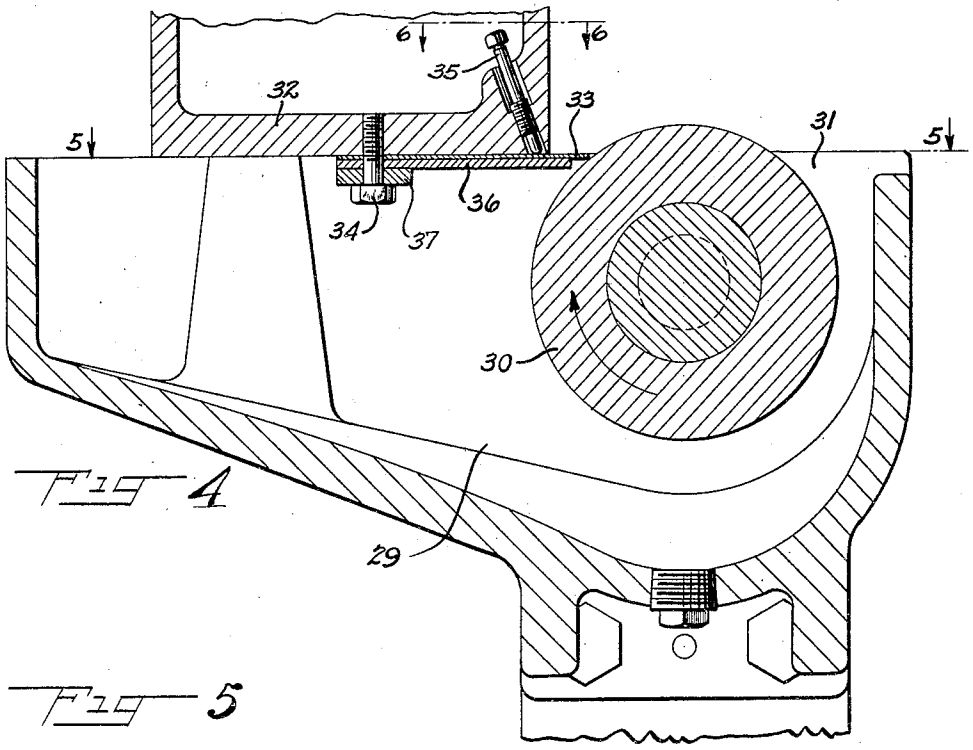
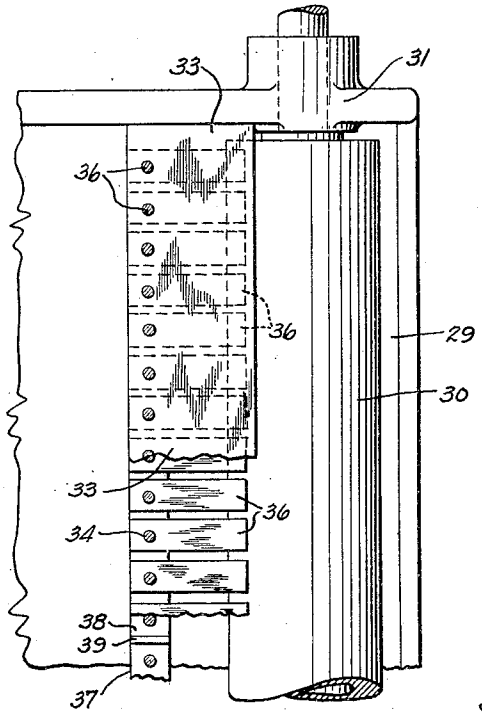


Fig 4

Fig 5



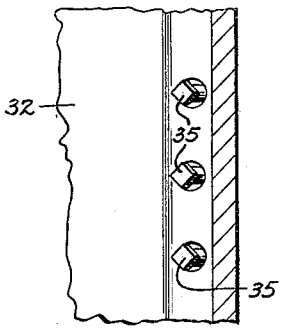


Fig 6

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1,862,744

UNITED STATES PATENT OFFICE

HARLAND FANKBONER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE GOSS PRINTING PRESS COMPANY, A CORPORATION OF ILLINOIS

INKING MECHANISM

Application filed August 31, 1929. Serial No. 389,702.

This invention relates to a novel and useful ink fountain and more particularly to an ink fountain for use with magazine and other printing presses.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:—

Fig. 1 is a vertical section through an undershot ink fountain in accordance with the invention;

Fig. 2 is a detail of the fountain blade shown in Fig. 1;

Fig. 3 is a detail of a spring back for the fountain blade of Fig. 2;

Fig. 4 is a vertical section through an overshot ink fountain in accordance with the invention;

Fig. 5 is a plan view of the fountain shown in Fig. 4, certain parts being broken away, and taken on the line 5—5 of Fig. 4;

Fig. 6 is a detail view of a portion of the ink fountain and is taken on the line 6—6 of Fig. 4.

Heretofore, in the construction of ink fountains, the fountain included a fountain roller and a fountain blade having sufficient inherent resiliency to move it away from the fountain roller when the adjusting screws were loosened. This construction has proved disadvantageous, however, by reason of the fact that when only one of the adjusting screws is loosened, the corresponding part of the fountain blade will move only an extremely small distance away from the roller, being held against the roller by the adjacent screws.

The present invention provides an ink fountain in which these disadvantages are overcome and by means of which the fountain blade will move away from the fountain roller when one of the adjusting screws is moved regardless of the position of the remaining screws. The invention further provides a fountain blade which can be made of relatively soft metal and does not wear the surface of the inking roller as rapidly as is now the case. Also, the fountain blade can be made of lighter material and is not subject to buckling as is now the case when the edge of the blade is not uniformly spaced from the roller.

My invention is applicable to overshot and undershot ink fountains and while it finds its greatest field of usefulness in connecting with magazine printing presses, it is also applicable to other types of printing presses.

It will be understood that the foregoing general description and the following detailed description as well, are exemplary and explanatory of the invention but are not restrictive thereof.

Referring now in detail to the present preferred embodiment of the invention as illustrated by the accompanying drawings, Figs. 1, 2 and 3 show the invention as applied to a typical undershot ink fountain, in which the fountain roller 10 is rotatably journalled by end bearings in the ends 11 of the fountain, and cooperates with a ductor roll 12 in the usual manner.

The fountain blade, as in the present preferred embodiment, may be made of a relatively thin piece of soft steel 13 and is mounted by screws 14 and plate 15 on the rear edge 16 of the fountain. For moving and pressing the fountain blade into contact with the fountain roller to regulate the amount of ink delivered by the fountain roller 10 and consequently the amount supplied to the corresponding part of the form, there are preferably provided a plurality of variably positionable adjusting screws, such as wing screws 17, threadedly mounted in a depending portion 18 of the fountain the inner ends 19 of screws 17 pressing against the underside of the fountain blade 13 and pressing it into engagement with the fountain roll 10.

The adjusting screws 17 are preferably evenly arranged along the length of the fountain blade and are separately movable so that the ink in the fountain can be fed with variable regularity to the different parts of the form. Locking nuts 20 may be provided for holding the screws 17 in the desired adjusting position.

For moving the fountain blade away from the roller as screws 17 are backed away from the roller, and to move a portion of the blade a relatively large distance even when only one of the screws is moved away, there are provided a plurality of resilient members, detachably connected with the under side of the blade and normally tensioned to move the blade away from the roller. As embodied, there is provided a series of spring fingers 21 projecting from a common base 22 and fastened to the rear side of the fountain by means of screws 14, which also serve to secure fountain blade 13 in position. These spring fingers are spaced along the length of the fountain blade and each finger is preferably bifurcated at its end to provide a slot 23 which is slipped over the corresponding small headed member 24 on the under side of the fountain blade, thereby transmitting the downward pull of the spring to the blade and serving to move the blade away from the roller. Headed members 24 may also serve as bearing surfaces for the ends of the adjusting screws and are preferably positioned to register with these ends 19. The slots 23 in the ends of the spring fingers are preferably made slightly larger than the shanks 24 of the headed members to allow slight relative movement of the blade laterally of the spring fingers 21. In this manner buckling of the blade 13 is avoided and any excessive lateral movement of the blade will be taken up by a sidewise bending of the spring fingers 21.

If desired, the headed members 24 can be omitted and, in this event, the spring fingers can be welded directly to the fountain blade 13.

Figures 4, 5 and 6 show the invention as applied to an overshot ink fountain in which the fountain roller 30 is rotatably journalled in the ends 31 of the fountain and rotates in contact with the ink contained in reservoir 29. In this embodiment of the invention, the fountain blade is supported by frame 32 extending across the top of the fountain and has its edge in operative relation with the fountain roller 30. The fountain blade is preferably made of a thin piece of relatively soft steel 33 and is secured in place by cap screws 34 spaced along the blade and clamping it to the frame member 32.

For pressing the fountain blade against or towards the roller 30, there are provided a plurality of adjusting screws 35, evenly spaced along the fountain blade 33 and threaded within corresponding holes in the frame member 32, so that the blade 33 or any portion thereof can be moved toward the roller 30.

For moving the blade away from the fountain roller, there are provided a plurality of spring fingers 36, preferably secured beneath the fountain blade and held in position by cap screws 34. In the present embodiment, there is provided one spring finger 36 for each adjusting screw 35 and each finger is located directly beneath its corresponding screw. As the screws 35 are backed away from the fountain roller, the springs push the blade away from the roller. If only a single screw is so moved, the corresponding spring finger moves only that portion of the blade away from the roller, and by reason of the present invention, the blade closely follows the movement of the screw until the blade is separated a relatively large distance from the roller.

When only a portion of the fountain blade is pressed into close contact with the roller, the blade is drawn endwise to a greater or lesser extent. Inasmuch as the springs 36 are not rigid with respect to the blade, this movement is independent of the springs and there is no tendency of the blade to buckle.

Means are provided for maintaining the springs parallel to each other and as embodied, plate 37 is employed between the heads of cap screws 34 and frame 32, the plate being provided with recesses 38 of substantially the same width as springs 36 and of a depth slightly less than the thickness of springs 36. The upstanding ribs 39 between adjacent recesses 38 space the springs from each other and prevent sidewise displacement of the springs and allowing individual movement of the springs to move only the corresponding portion of the fountain blade.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages. It is understood that the relative position of the resilient members and the adjusting screws may be reversed with respect to the fountain blade, if desired.

What I claim is:—

1. An ink fountain including in combination a fountain roller, a fountain blade cooperating therewith, a plurality of springs uniformly spaced along the length of the blade forcing the blade away from the roller and screws for opposing the action of the springs.

2. An ink fountain including in combination a fountain roller, a fountain blade cooperating therewith, a plurality of spaced resilient members at the ends of and intermediate the length of the blade yieldingly spacing the blade from the roller and a plu-

rality of independently movable adjusting means for opposing the action of the resilient members.

3. An ink fountain including in combination a fountain roller, a fountain blade cooperating therewith, a plurality of independent closely adjacent resilient members for moving the blade away from the roller and a plurality of independently movable screws for opposing the action of the resilient members and pressing the blade into contact with the roller.

4. An ink fountain including in combination a fountain roller, a fountain blade cooperating therewith, resilient means at a plurality of points and uniformly spaced throughout the length of the blade for forcing the blade away from the roller and means for opposing the action of the resilient means for moving the blade towards the roller.

5. An ink fountain including in combination a fountain roller, a fountain blade cooperating therewith, a plurality of springs attached to the blade and spaced along its length for moving the blade away from the roller and a variably positionable screw for each of the springs to move the blade towards the roller.

6. An ink fountain including in combination a fountain roller, a fountain blade cooperating therewith, and means connected with the blade at a plurality of points for resiliently moving the blade away from the roller and for positively moving the blade toward the roller.

7. An ink fountain including in combination a fountain roller, a fountain blade cooperating therewith, and means cooperating with the blade at a plurality of points throughout its length for moving the blade away from the roller and separate means for moving the blade toward the roller.

8. An ink fountain including in combination a fountain roller, a fountain blade cooperating therewith, a plurality of means spaced along the length of the blade and cooperating therewith for moving the blade toward the roller and separate means for resiliently moving the blade away from the roller, said last named means acting at a plurality of points along the length of the blade.

9. An ink fountain including in combination a fountain roller, a fountain blade of soft steel cooperating therewith, a plurality of springs detachably connected with the blade and spaced along its length to move the blade away from the roller, and a plurality of variably positionable adjusting members to oppose the action of the springs and move the blade toward the roller.

10. An ink fountain including in combination a fountain roller, a fountain blade of soft steel cooperating therewith, a plurality of springs detachably associated with the blade and spaced along its length to move the blade away from the roller, and adjusting members to oppose the action of the springs and move the blade toward the roller.

11. An ink fountain including in combination a fountain roller, a fountain blade, a plurality of springs detachably associated with the blade and with respect to which the blade is laterally movable, said springs tending to move the blade away from the roller, and means for moving the blade toward the roller.

12. An ink fountain including in combination a fountain roller, a fountain blade cooperating therewith, a plurality of springs intermediate the ends of the blade for moving the blade relative to the roller and screw members for opposing the action of the springs.

13. An ink fountain including in combination a fountain roller, a fountain blade cooperating therewith, resilient means for separately moving each part of the blade relative to the roller and means for opposing the action of the resilient means for moving the blade against the action of the resilient means.

In testimony whereof, I have signed my name to this specification.

HARLAND FANKBONER.